1884MNRAS..45...34.

absorption varies very greatly, and even unexpectedly, with the meteorological conditions of the time and place of the observations.

3. The occasional observations on nights not favourable to accurate measurement.
4. The variability of the lustre of the stars themselves.

It does not appear that either photometer, in its use or construction, is open to systematic error; and further, the effect of small differences of colour does not seem to affect the photometric determination. But there is observable a tendency in the Harvard observations to represent the zenithal magnitudes of stars, at a considerable distance from the zenith, as slightly brighter than the results derived at Oxford. This difference would, to some extent, be explained by supposing the co-efficient of atmospheric absorption, as used at Harvard, to be in excess of its actual amount. The coefficient 0·25 mag. is slightly larger than has been found at Continental observatories, but it is not here suggested that the Harvard value rests on a less secure basis than the others.

Oxford University Observatory:
1884, *Nov.* 13.

Observations of Stars Occulted by the Moon during the Eclipse of October 4, 1884, *at the University Observatory, Oxford.* Made under the direction of Prof. C. Pritchard, D.D., F.R.S.

Phase	Immersion.		Emersion.	
Instrument	Grubb Refractor.	De LaRue Reflector.	Grubb Refractor.	De LaRue Reflector.
Aperture ...	12¾ in.	13 in.	12½ in.	13 in.
Power ...	120.	150.	120.	150.
Observer ...	Plummer.	Jenkins.	Plummer.	Jenkins.
G.M.T.	h m s	h m s	h m s	h m s
63*			9 31 14·5	9 31 14·3
69			9 39 30·1	9 39 29·8
71			9 19 32·8	
74			9 50 9·0	9 50 8·3
76			9 32 19·0	9 32 19·1
81	9 32 22·7	9 32 23·2	10 36 59	
82	9 23 51·4		10 14 31·7	10 14 33·1†
85	9 23 55·1	9 23 52·3	10 30 52·2	10 30 50·8
94	10 6 34·7	10 6 33·8		
95	10 11 42·1	10 11 43·0		
96		10 39 26·6		
106	10 37 11·0	10 37 12·9		
107		10 37 26·8		
108	10 36 6·4	10 36 6·4‡		
109				

* Numbers as given in Dr. Döllen's list, *Ast. Nach.* No. 2615.

† Star faint. ‡ The immersion of the two stars was simultaneous.

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1884MNRAS..45...34.

Stars observed as Occulted, but not given in Dr. Döllen's List.

				Estimated Position Angle.
(1)	9 34 1·4			85°
(2)			9 37 59·2	160
(3)		9 33 24·2		80
(4)			10 13 47·8	315

Approximate coordinates of the Four Occulted Stars not given in Dr. Döllen's List.

R.A. of (1) = R.A. of 85 + 4′ 14″ Decl. of (1) = Decl. of 85 + 2′ 5″
,, (2) = ,, 76 + 3 47 ,, (2) = ,, 76 + 0 39
,, (3) = ,, 85 + 4 31 ,, (3) = ,, 85 + 3 37
,, (4) = ,, 81 − 7 27 ,, (4) = ,, 81 + 5 9

Owing to the peculiar condition of the occulting limb in respect of illumination, the observations of Immersion were practically more difficult than those of Emersion. The observations of Emersion of stars not predicted may possibly have been affected by unexpectedness of the phenomenon and the greater faintness of the stars.

Altogether 22 phenomena were observed, including the occultation of the four faint stars not predicted in Dr. Döllen's list.

University Observatory, Oxford:
1884, *Nov.* 13.

Total Eclipse of the Moon, 1884, *October* 4. *Observed at the Radcliffe Observatory, Oxford.*

(*Communicated by E. J. Stone, M.A., F.R.S.*)

This eclipse was observed at the Radcliffe Observatory, Oxford, with the only two instruments available for the purpose, the Heliometer of 7·5-inches aperture, and the 7-inch Equatorial. Both semi-lenses of the Heliometer were used, but the images were practically coincident. The faint stars occulted before totality were looked for, but none could be observed until the No. 63 of Struve's list. The observations with the Heliometer were made by Mr. Wickham, those with the Equatorial by Mr. Robinson. As there were only two instruments available, I merely watched the eclipse with the naked eye. The eclipse was much the darkest that I have ever seen, and just before the instant of totality it appeared as if the Moon's surface would be invisible to the naked eye during totality; but such was not the case; for with the last appearance of the bright reflected sunlight there appeared a dim circle of light around the Moon's disk, and the whole surface became faintly visible, and continued so until the end of totality.

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